minute, irregular, every 4th or 5th beat being missed, but of fairly full volume. There was complete retention of urine and fæces. The urine had to be drawn off morning and evening for three days and the bowels in spite of purgatives did not act till the third day. On the fourth morning he was able to pass his urine normally. The amount of urine drawn off was not great during the three days. Patient had never suffered from stricture of the urethra.

These symptoms, though not the classical ones, indicate that the patient suffered from shock even though the injuries were of a trivial nature. As I have seen no such symptoms described in the cases reported from the front I bring this case to notice. Recovery has been uneventful and the patient is now able to walk about.

PREVALENCE OF INTESTINAL PARASITES IN THE UNITED PROVINCES.*

By J. G. MUKERJI, L.M.S.,

and

BANARSI DASS, M.B., B.S.,

Demonstrators of Pathology, King George's Medical College, Lucknow.

THE stools of six hundred patients were examined in the King George's Hospital from 3rd October 1913 to 14th December 1914. Major H. J. Walton at first wished that the stool of every patient admitted to the hospital should be submitted to a microscopic examination. But it was soon found to be impracticable to get through all the specimens. It was arranged that all motions with the least suspicion of containing parasites or their ova should receive attention first. In addition to these a good many stools were put up indiscriminately as time permitted. Many of the stools were sent up for re-examination on several occasions.

We believe the results, such as they are, may be considered of some value specially in view of the fact that, as far as we are aware, no systematic examination of stools has so far been undertaken in the United Provinces. The figures may be taken to give an idea of the incidence of intestinal parasites in the average hospital-going class of people in this province.

Roughly speaking 40 per cent. of the people, whose stools were examined, harboured intestinal parasites. Of these nearly 27 per cent. were intestinal worms and about 13 per cent. were protozoa.

Ankylostoma duodenale.—The eggs of this worm alone were discovered in 70 specimens, and in 26 it was found along with other parasites. It appears to be the commonest intestinal parasite in this series of cases. Very few of the hosts seemed to suffer much inconvenience from its presence, even when their stools showed large numbers of ova. Besides the ordinary segmented ovum usually seen in the fæces, one of us (J. G. M.) came across a newly developed embryo wriggling inside the egg shell on two occasions. On inquiry it was found that the bed-pan containing the specimen was left exposed to the morning sun for an hour or more. This exposure to warmth probably accounts for the quick development.

In six cases in which numerous ova were found a culture was attempted. Larvæ developed only on two occasions. The method adopted was this. A little finely powdered earth was placed in a petri dish, which was then sterilised in the hot air steriliser. Another dish was prepared in the same way but with animal charcoal in place of earth. The earth was well mixed with distilled water and a little of the fæcal matter was put in the centre. The whole was then stirred up with a rod so as to give the consistency of thin mud. The dish was covered up and laid aside at room temperature. The charcoal dish was dealt with in the same way. On the third or fourth day according to the temperature typical rhabditiform larvæ could be seen under the low power.

Ascaris lumbricoides.—In nine cases ascaris ova were seen in the company of other parasites, and they were found alone in 20 specimens. In October 1913 some of the fæces containing numerous ova was mixed up with distilled water and put away in the warm incubator. Another specimen was kept in 0·2 per cent. hydrochloric acid, and a week later a little of this was transferred to normal saline. All the three preparations were kept at 37 C. for six months. This was done to give the ova a chance of developing, but as nothing happened they were kept in the incubator for another six months. At the end of one year no change was noticed, so the tubes were left at the room temperature for six months more. After 18 months the ova were found to be practically unaltered in appearance.

Trichocephalus trichiuria.—Ova were met with singly in 8 specimens; they were seen with other parasites in four cases.

Tape-worm ova, which were almost certainly Tænia saginata, were found alone in nine cases, and in the company of other parasites in the remaining 9.

Oxyuris vermicularis.—Ova were discovered only twice, once along with ankylostome ova and on the other occasion with tapeworm eggs. In both stools a few adult worms were found. This finding probably does not represent correctly the prevalence of the oxyuris vermicularis as we are aware of a considerable number of cases of infection among the general population of Lucknow.

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* Forwarded by Major Megaw, I.M.S

Strongyloides intestinalis was found only in one case. The patient was a Mohammedan male, aged 50 years. He came in with cough, and harboured ankylostoma duodenale. In January 1914 one of us (B.D.) was looking at his stool when an actively moving creature suddenly appeared in the field of the microscope. The movement was of a wriggling character. Sir Leonard Rogers, I.M.S., who was in Lucknow at the time, was requested to see the specimen. He at once diagnosed it to be a strongylus. This patient's stool was watched from day to day, but no more strongyloides could be seen for six days. On the seventh day the worm again put in an appearance only to disappear once more. Three days after this we lost sight of the man.

Entamœbæ and Cysts.—Entamœbæ were found alone in 7 cases; with numerous trichomonas in 4; with ova of intestinal worms in 6; and in two cases there were also cysts containing 8 nuclei.

With regard to the classification of the amœbæ found we are not able to satisfy ourselves that they belonged to more than one species. They were large in size, actively motile, and in many cases contained red blood corpuscles: there was a marked distinction between the ecto- and endo-plasm, and so they may be regarded as having the appearance of "Entamœba dysenterica." They were found only in cases having the clinical manifestations of dysentery, and so they may fairly be assumed to be amœbæ of dysentery. All the cases yielded rapidly to emetine treatment and the amœbæ disappeared from the stools.

Cysts were found in 22 cases in all—only two of these were actually suffering from dysentery. The average diameter of the cysts was 30 microns, and the number of nuclei was never less than eight, this being the commonest number, but sometimes more than eight were observed. In two specimens the cysts were very plentiful. On both occasions some of the fæcal matter was mixed up with normal saline and injected high up into a kitten's rectum by means of a soft catheter and syringe, in the hope of seeing adult entamœbæ develop from the cysts. The kitten's motions were carefully watched for several weeks, but the cysts disappeared in a day or two and no amœbæ appeared. No feeding experiments have yet been done.

Balantidium coli was seen singly in one case only; in another it was found with trichomonas; and in the remaining two there were ova of ankylostoma as well. All the four patients were suffering from chronic diarrhœa.

Trichomonas intestinalis was always found in liquid motions and usually in large numbers. In 22 cases it was the only parasite seen. In some cases smears were made and fixed by the wet method. We got quite satisfactory results by staining these smears with iron hæmatoxylin. The dry method was not much of a success for this organism.

Multiple infections.—The highest number of intestinal parasites in a single individual's fæces was five, *viz.*, ova of Asc. lumbricoides, Ank. duodenale, Tænia saginata, Balantidium coli, and Entamœbæ. There were two cases of quadruple infection, five of triple, and thirty-one of double infection.

Our best thanks are due to Major H. J. Walton, I.M.S., for his kind criticism and guidance especially in the identification of the cysts of amœbæ, as well as to Major J. W. D. Megaw, I.M.S., for his valuable advice and help.

Prevalence of Intestinal Parasites in the United Provinces.

Number of patients.	Ova of Intestinal Worms.						Strongyloides intestinalis.	Protozoa.					Total infection.	No infection.
	Ankylostoma duodenale.	Ascaris lumbricoides.	Trichocephalus trichiuris.	Tapeworm.	Oxyuris vermicularis.	Total.		Entamœba.	Cysts of Entamœba.	Balantidium Coli.	Trichomonas intestinalis.	Total.		
600	96	29	12	18	2	157	1	19	22	4	32	77	235	365
PERCENTAGE.														
100	16	4·8	2	3	0·3	26·1	0·16	3·16	3·6	0·6	5·3	12·7	39·2	60·8